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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,091	10/31/2003	Cheng-Hsuan Chen	Chen 5-17	2681

7590 04/07/2005

Docket Administrator  
Lucent Technologies Inc.  
101 Crawfords Corner Road  
Rm. 3J-219  
Holmdel, NJ 07733-3030

EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/699,091

Applicant(s)

CHEN ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-12 is/are rejected.
- 7) ☒ Claim(s) 13-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Pinnavaia et al., U.S. Patent # 6,465,387. They disclose the preparation of mesoporous organosilicon oxide materials employing the methodology set forth in column 8, lines 48-67 through column 9, lines 1-11. Relevant to the present discussion, the precursor mixture used in constructing mesoporous product is a mixture of a silicon (or metal) alkoxide, e.g. silicon (IV) ethoxide which is also known to the skilled artisan as tetraethoxysilane or TEOS, and an organofunctionalized silane including any of those outlined in columns 10 and 11. Notably, the list of organofunctionalized silanes includes several that contain both a hydrophobic substituent and a hydrophilic substituent including 3-mercaptopropylmethyldimethoxysilane and N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane. Given that these compounds possess both hydrophobic and hydrophilic non-hydrolyzable moieties, it is the Examiner's position that they are inherently amphiphilic hence claims 10 and 11 are fully anticipated. (It is understood that these will be contrasted with the preferred embodiment of Applicant's invention where the precursor is a partial condensate of a mixture of silanes, one of

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which contains a hydrophilic, non-hydrolyzable substituent and the other a hydrophobic, non-hydrolyzable substituent. Nevertheless, claim 10 is not specific as to how the amphiphilic precursor is to be constituted and is, therefore, open to other types of amphiphilic starting materials.)

Concerning claim 12, this aspect is not expressly taught by the reference.

Whether the hydrophilic groups end up being oriented towards the pores is a function of their orientation relative to the surfactant molecules during the templating and subsequent polycondensation processes. Because they are hydrophilic however, as is the bulk of the surfactant molecule, they will inherently be oriented inward towards the surfactant. Indeed, one of ordinary skill would expect the precursor molecules taught by the reference to behave/be oriented in the same fashion as was observed in Applicant's system given the similarities in the methodology used to generate the porous product.

***Allowable Subject Matter***

Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Unlike Applicant's invention where the hydrophobic content group may be manipulated by judicious selection of the reaction stoichiometry of the hydrophobic group-bearing silane and hydrophilic group-bearing silane so as to obtain a precursor having a particular degree of hydrophobicity/hydrophilicity, the number of hydrophilic groups to hydrophobic groups in the product taught by Pinnavaia is necessarily 1:1 since one of each type of group is

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present in the organosilane precursor. It cannot be stated with any certainty that these materials would be non-wettable with water.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 4, 2005

*Marc Zimmer*  
Marc Zimmer  
AU 1712